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Medical Director's Update for Base Station Physicians' Committee November, 2011

Duty Officer contact is for immediate help. You may contact the EMS Duty Officer for assistance when prolonged off load delays occur, e.g. over 30 minutes, or there are multiple units delayed. (Your agency policy may require notifying a supervisor). The duty officer should be called after working with the hospital staff fails to resolve the situation. Please do not call the duty officer if you have left scene and do not need immediate help. Please leave a contact number for the duty officer to contact you.

As we head into the flu/viral season the Capacity Plan has been reviewed. Some changes have been made and it is out for additional comment. The finalized plan should be available soon.

So far there is little influenza in the community. Influenza vaccine is critical. Surveillance of emergency room visits and laboratory testing shows there are still only scattered cases of influenza in the community.

Influenza vaccines are important for health care workers. Those who receive the vaccine are less likely to miss work. When ill, health care workers often work despite symptoms of illness. More importantly influenza can be transmitted before persons have symptoms of illness.

The vaccine is most effective in younger, healthier individuals. The very young, the elderly and immunocompromised persons of all ages may not be protected even if immunized. It is important those who come in contact with these groups be immunized. Influenza vaccination decreases mortality in the patients health care workers care for.

One caution about influenza vaccine in the past has been use in persons who are allergic to eggs. This has been changed somewhat after recent studies demonstrated safe receipt of vaccine in persons with egg allergy. The national Advisory Committee on Immunization

Practices developed an algorithm for influenza vaccination for persons who report allergy to eggs. It is available at the CDC website in the MMWR of August 26, 2011. Persons with anaphylactic reactions to egg are still excluded.

Tale of Our Cities meeting is December 12, 2011. Registration is now available on-line.

Ondansetron (Zofran) is the subject of a drug safety communication by the FDA. In a small number of cases the drug was correlated to prolongation of the QT interval on the EKG, in some cases when used with other drugs, and so a potential risk for ventricular tachycardia. The drug is used extensively in clinical practice without problems. One group in whom there may be increased risk are those with congenital long QT syndrome. FDA is requiring that the manufacturer conduct a thorough QT study to assess the drug's potential to prolong the QT interval.

EMS send out a communication on November 1, 2011 outlining this issue. We will continue to use ondansetron as we have, and await the evaluation to come. Contact EMS for any questions.

The poison control center must followup on patients about whom it is consulted. The PCC requires patient information in order to follow the patient later as one of the caregivers.

The federal Ryan White act was renewed. This describes the potentially life-threatening infectious diseases to which emergency response employees may be exposed by body fluid exposures, aerosolized airborne and droplets. Examples of body fluid contacts include hepatitis B and C, HIV virus, anthrax, rabies, and viral hemorrhagic fevers. If an emergency response employee is exposed to an agent the medical facility is given guidelines for making determinations whether there was an exposure. We have separate California law covering exposures so those procedures remained in place during the time Ryan White was not effective.

State EMS is moving forward with regulations. They will likely release proposed regulations for EMS for Children systems, and later STEMI system and stroke system regulations.

Opioid pain relievers are involved in an increasing number of deaths. OPRs as they are called are associated with more deaths than heroin and cocaine combined. The death rate of overdoses increased three times from 1991 and 2007. Solutions are aimed at careful use of OPRs, identifying inappropriate use, limiting prescribing to one practitioner for some patients, and other efforts. The challenge is to allow safe and effective pain treatment, while avoiding inappropriate use. The DEA continues to offer drug turn in days to reduce "left over" narcotics in homes.

The 10-year review of the trauma system at last month's BSPPC meeting revealed several interesting things. The number of trauma patients per 100,000 population is flat over the last

10 years. The total number of patients has trended up with population, although it dropped slightly in 2009 and 2010. The former typical patient was someone 20—54 years of age injured in a motor vehicle incident. Over the last 10 years this has changed so the typical patient is older—over 45 years of age, and injured in a fall.

This may be due partly to an older population. More likely is the recognition that falls in the elderly sometimes cause severe injuries. This is complicated by the large number of patients on anticoagulants compared to the past. The risk of a life threatening injury, especially head injury, is higher among those taking anticoagulants. Overall, falls are now the leading mechanism of injury, followed by motor vehicle occupants, assaults, sports/recreation and motorcycles. The most severely injured overall are motorcycle injury patients. While males outnumber females at all ages, it is especially pronounced starting in the teenage and 20 years. The mean length of stay in 3 days, the median 1 day, indicating most patients have a short stay, but a few much longer.

Stroke system data shows the system is functioning well. The first full year of data, for 2010 was recently compiled. For that year, the stroke hospitals reported 4,935 patients of whom 69% were ischemic stroke, 11% intracerebral bleeds (ICBs), 5% subarachnoid bleeds, and 15% transient ischemic attacks (TIAs). Just over half of the patients arrived by EMS, 52% with walk-ins 38%, and interfacility transfers 10%. Use of EMS was more common for ICBs, and a little less common for TIAs and subarachnoid hemorrhages. The largest fraction of the patients were age 80+ (28%), with 70-79 (22%), 60-69 (18%), 50-59 (13%), and 40-49 (7%). Gender distribution was even. Discharge location was home for the largest group (43%), or home with home care in some. Most of the rest went to skilled nursing facilities or to rehabilitation facilities. Eight percent died.

Of the EMS transported patients 40% arrived in 4 hours or less. Of these 27% received intravenous tPA. Among tPA recipients 32% received tPA in 60 minutes or less. This is excellent and compares favorably with a large study this year on door to needle time in stroke. Generally, patients who receive tPA within 60 minutes of hospital arrival have improved outcomes, with fewer complicating intracerebral bleeds.

The STEMI system has seen 4,101 patients as of the last reporting date, the first quarter of 2011. Seventy six percent arrived by 911 and 78% of those were prehospital activations. Among the activations 73% went to the cath lab, with 62% receiving a percutaneous coronary intervention (angioplasty, etc.). The 11% who didn't get an intervention may have had severe disease and had surgery, or in some cases had mild disease or another diagnosis.

The number of cases jumped in the first quarter of 2011, but in the past the numbers have varied from quarter to quarter.

False positive EKGs were stable from 2007 through 2009 at about 20%. They then decreased, to 5% in the second quarter of 2010. In the subsequent three quarters the false positive rate rose steadily back to 20%. This occurred despite more availability of EKG transmission.

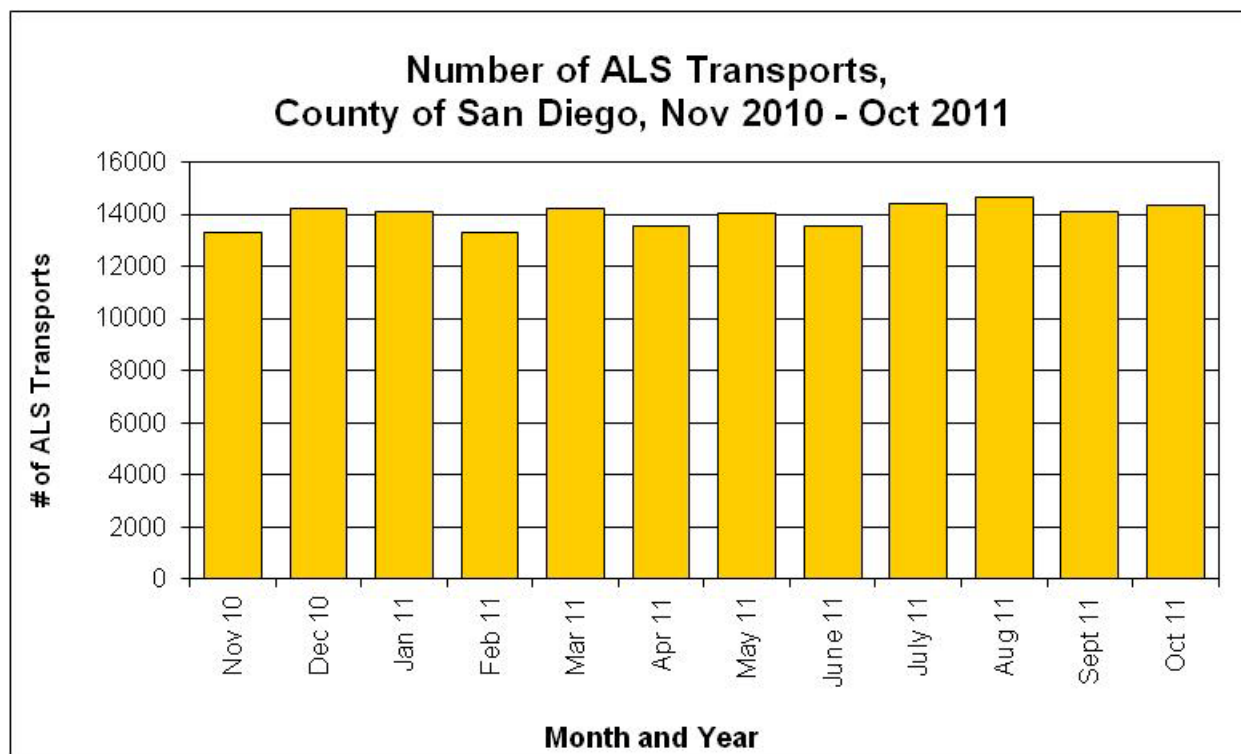
Reasons include most commonly mimics of STEMI on the EKG and MD activation despite no STEMI reading on the EKG. Less common reasons are multiple EKGs performed until one shows STEMI, poor quality EKGs, and medic overreads. Causes of mimics include atrial flutter or dysrhythmias, bundle branch block and others. Mimics would likely be much less common if EKGs were performed only in patients with chest pain, as the false positive rate has been shown to increase when done for atypical presentations. Poor quality EKGs have leads off (not all 12 with a reading), muscle tremor, wandering baseline, electrical interference or other errors that are read as STEMI by the interpretive program.

Data collection on field prehospital 12-lead to device time is also collected and the majority of these cases had times less than 90 minutes.

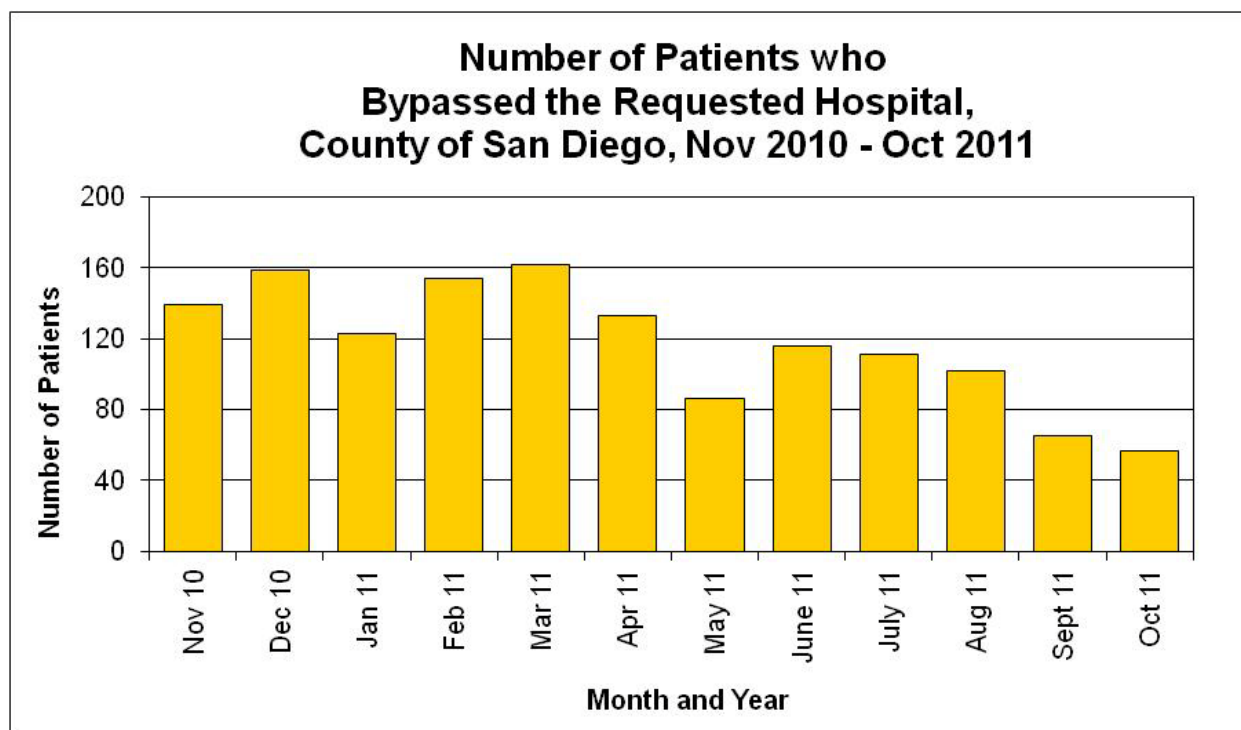
The Cardiovascular Advisory Committee meets quarterly to discuss issues about the STEMI system. After much discussion they recommended changing the revascularization time from door to balloon time to door to device time. This better reflects other data systems and the real reperfusion time. Devices include balloon angioplasty, thrombectomy/clot aspiration, direct use of stent, or guidewire use. For the first quarter of 2011, median prehospital activated patient door to device time was 57 minutes; non-activated 69 minutes; and walk in 76 minutes. This is similar to the mean door to balloon time for the first quarter 2011 and to the 2007-2010 data. For activated patients 95% have a door to balloon time ≤ 90 minutes.

While door to balloon or device times are stable, from 2007 on there has been continuing reduction in door to balloon times for non-activated and walk in patients. Although not down to activated patient levels, they are approaching that level and are much faster than before the system existed.

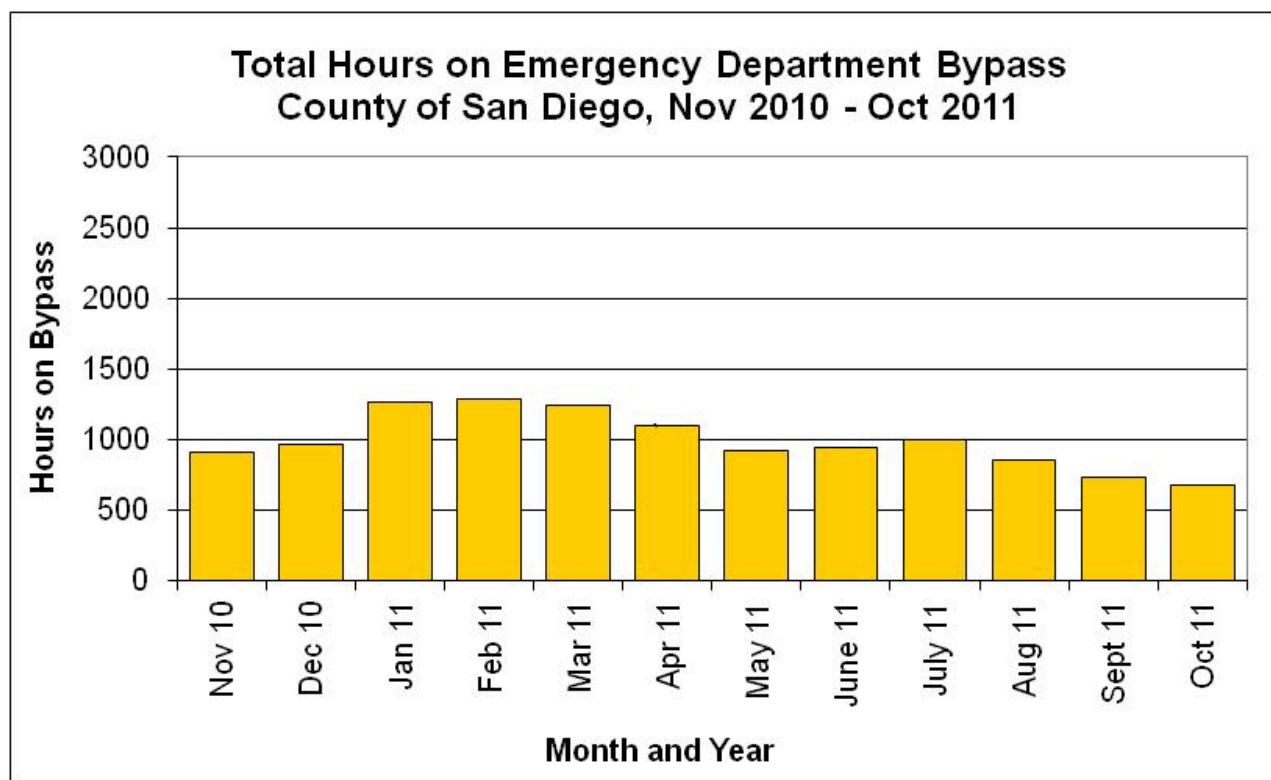
The STEMI system is meeting our expectations. Reperfusion times are excellent, and quality markers are all as expected. The current challenge is to implement EKG transmission and reduce the false positive rate on EKGs and subsequent unnecessary activations.



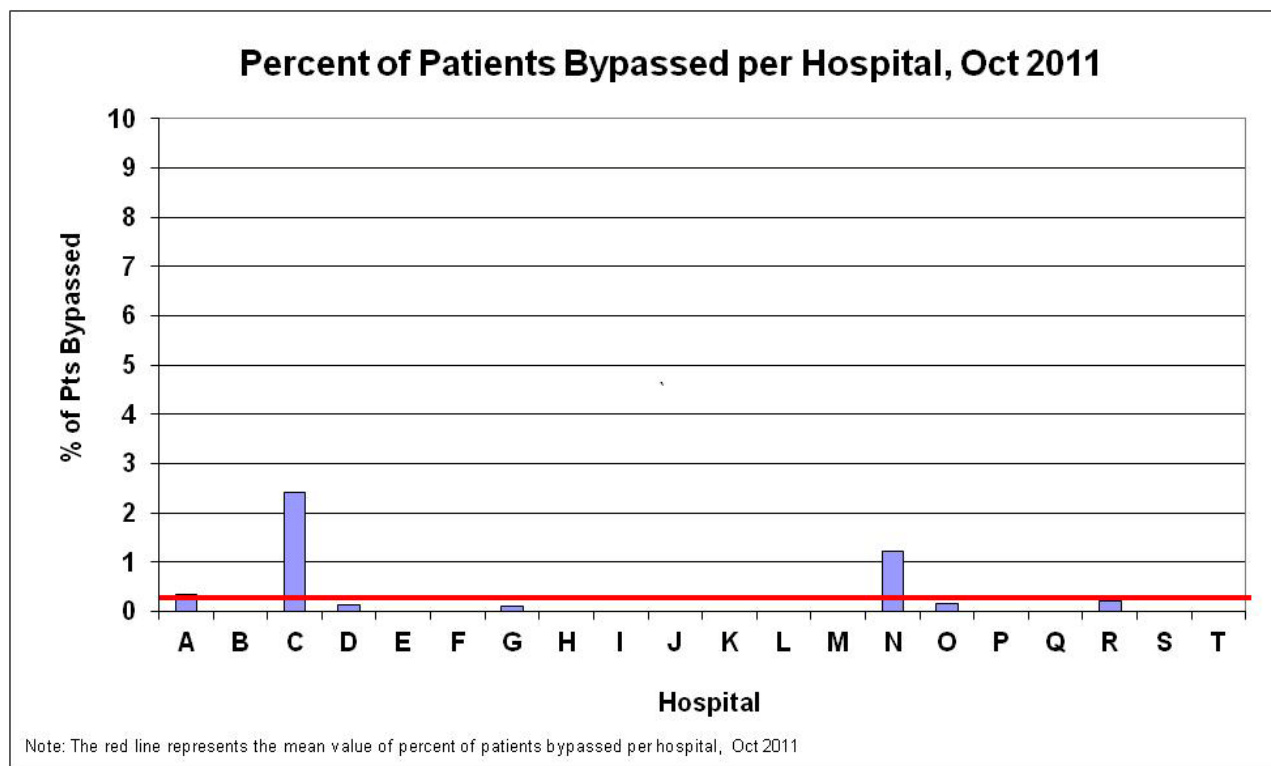
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Nov 2010 – Oct 2011 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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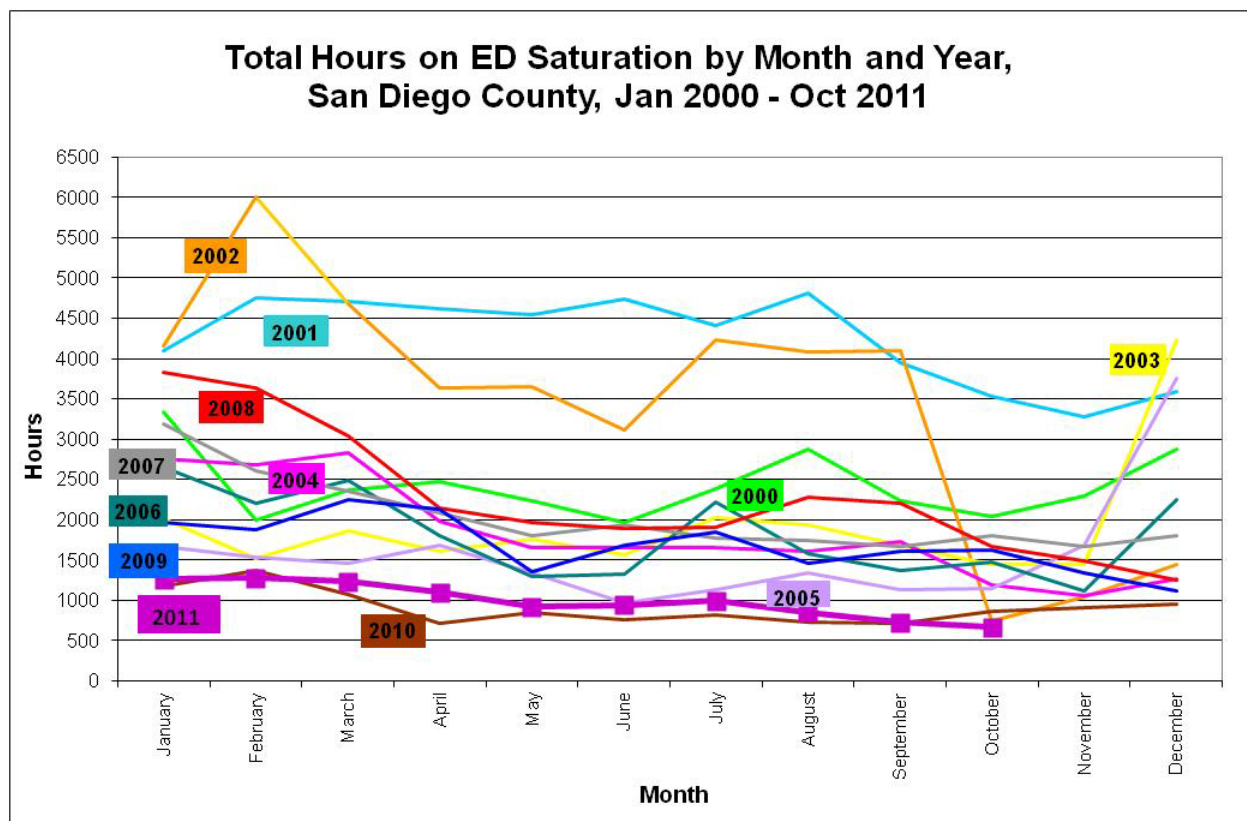


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records,
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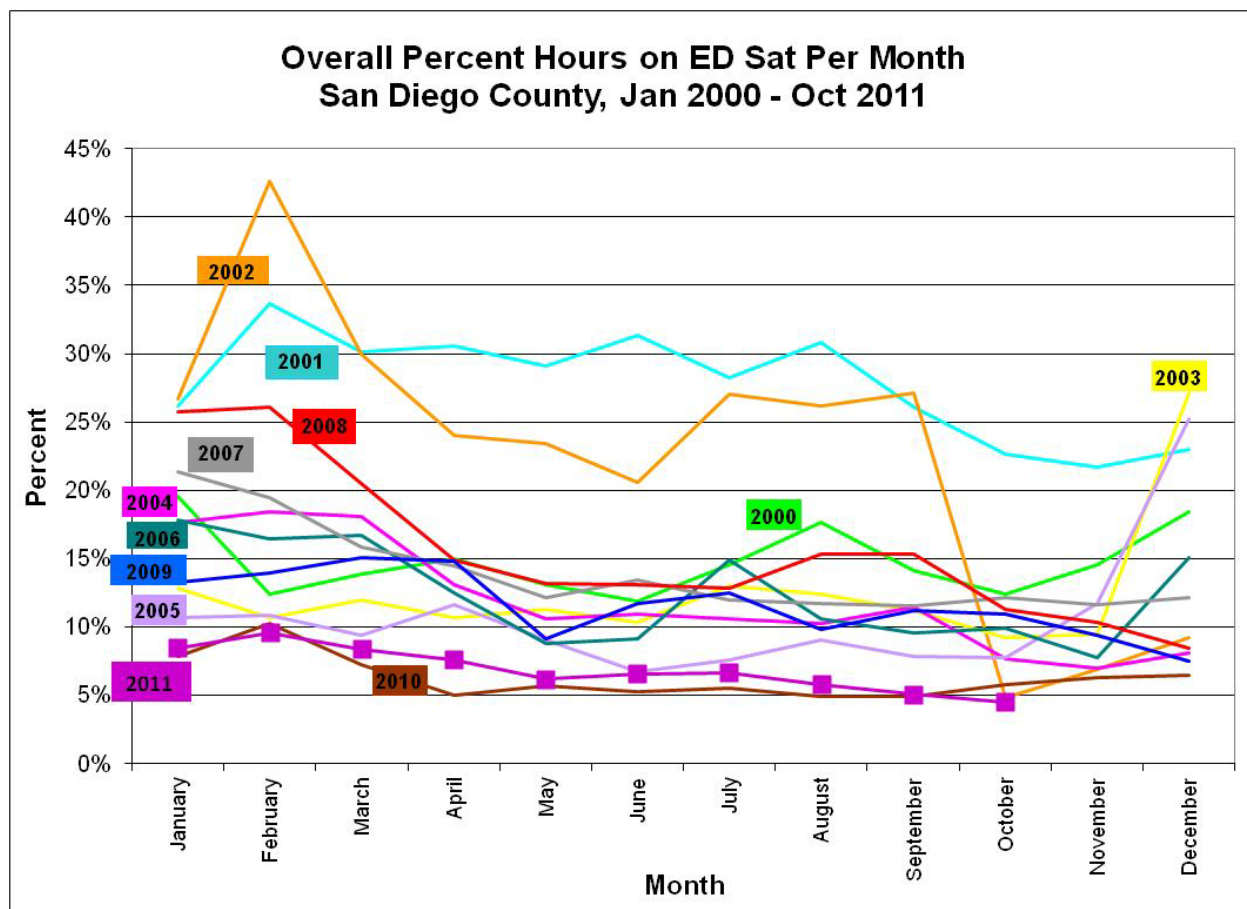


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Oct 2011

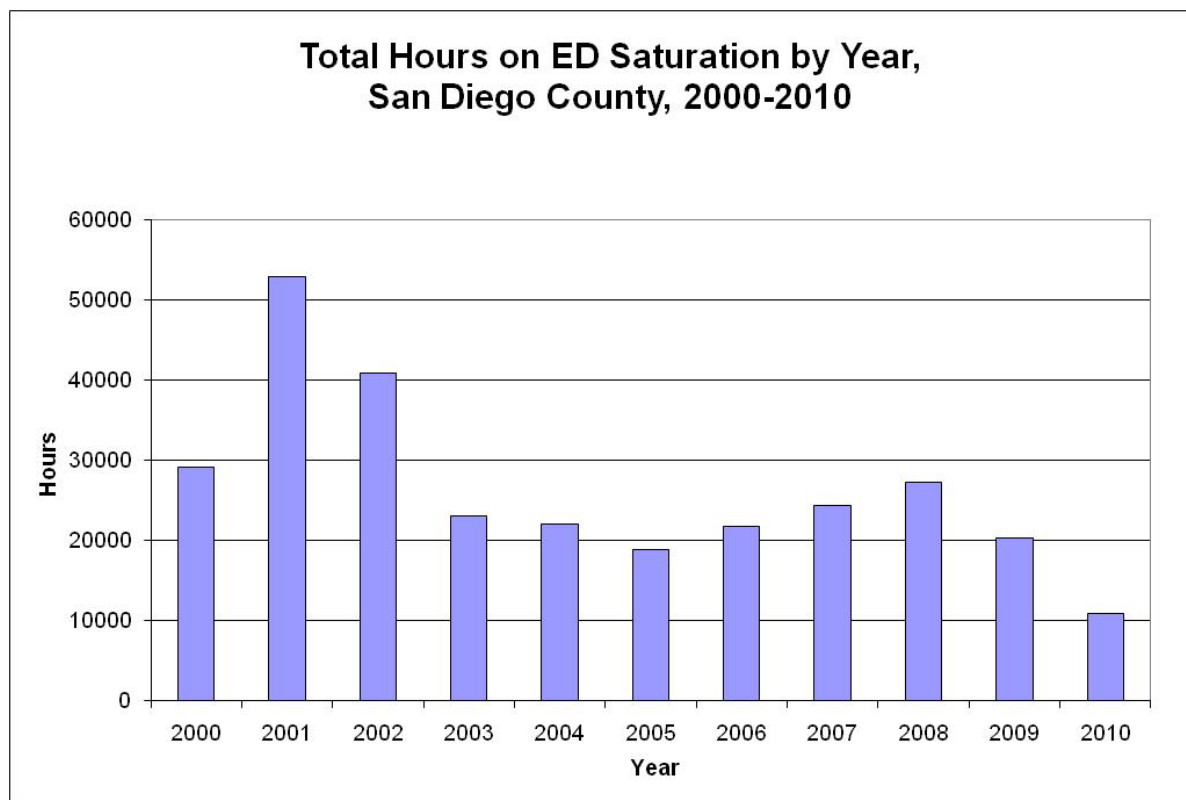
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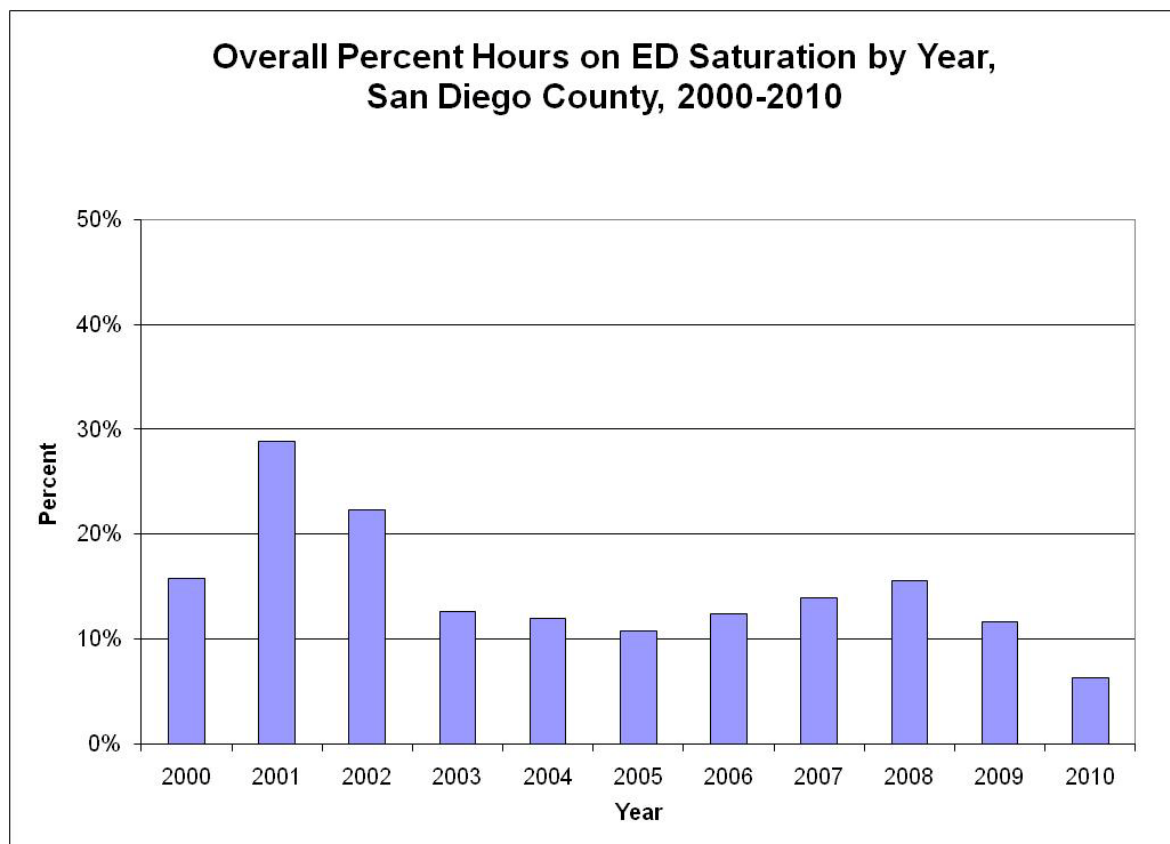
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – Oct 2011



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